



In Re:  
Serial No.:  
Art Unit:

Helmut W. Kucera  
09/627,312  
1773

File Ref:  
Filing Date:  
Examiner:

IR-2800(NBA)  
July 27, 2000  
Monique R. Jackson

1773  
RECEIVED  
JAN 26 2004  
TC 1700

Title: "Two-Part Aqueous Metal Protection Treatment"

\*\*\*\*\*

January 9, 2004

Assistant Commissioner for Patents  
Mail Stop IDS  
PO Box 1450  
Alexandria, VA 22313-1450

Re: Supplemental literature bibliographic information

Dear Sirs

In follow up to Applicant's prior response, see the attached bibliographic information for the article on zirconium materials submitted Dec. 17, 2003 with applicants' response to the Office. This article was published at least as early as 1987.

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2/5/4 (Item 4 from file: 31) DIALOG(R)File 31:World Surface Coatings Abs (c) 2004  
Paint Research Assn. All rts. reserv.

00413341 WSCA Abstract Number: 88-00897 WSCA ID Number: 260897

**Use of zirconium chemicals in water-based coatings.**

MOLES P J

Proc. Paint RA 7th Internat. Conf, 'Water-borne Coatings' , London 1987, 115-32.  
1987

**Journal Announcement:** 8802 **WSCA Update Code:** 8712

**Document Type:** Conference **Language:** English

**Section (Code,Heading):** 07 Driers and Minor Additives

**Section Code Cross-Reference:** 35;

**Abstract:** Water-soluble zirconium compounds may be in one of three distinct forms, defined by the surface charge. The primary reaction of such compounds is with carboxyl groups to form covalent bonds; reaction with hydroxyl groups may also occur to form hydrogen bonds. The first reaction may be used, e.g, in acrylic-based water-borne coatings to increase resistance to heat, water, alkali and scrubbing, as well as to improve adhesion. Hydrogen bonding interactions may be used to provide thixotropic or pseudoplastic effects.

**Descriptors:** Water-borne Coatings; Zirconium Compounds; Adhesion Promoters; Cross-linking Agents; Thixotropic Agents

**Chemical Names:** ACRYLIC; CARBOXYL; HYDROXYL; ZIRCONIUM

**Identifiers:** Water-borne Coatings-- zirconium compounds, uses; Zirconium Compounds-- water-bornes, uses; Adhesion Promoters-- zirconium compounds; Cross-linking Agents-- zirconium compounds, for carboxylated; Thixotropic Agents-- zirconium compounds

**Additional Terms (Identifiers):** heat resistance; water resistance; alkali resistance; scrub resistance; emulsion paint